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## Regional Development and EU Research Policy

### Research Memorandum 2003-5

Faculteit der Economische Wetenschappen  
en Bedrijfskunde (FEWEB)



# **Regional Development and EU Research Policy**

## **Research Memorandum 2003-5**

**Fabienne Corvers  
Peter Nijkamp**

### 1. Introduction

Harmonisation of European policy ranks high on the EU agenda. But implementation of policy requires a fine-tuning vis-à-vis national and regional settings. This issue is particularly important as Europe is essentially composed of heterogeneous regions. And with the advent of the Candidate Countries, this feature will become even more prominent. One look at Europe's regional map reveals unmistakably how different Europe's regions are. What they seem to have in common is their diversity: whether it concerns their economic performance, sectoral specialisation, regional culture, natural endowments, or political decision power, to name a few aspects (Cole & Cole 1993; Button & Pentecost 1999; Corvers 2001). Yet, the isle of Crete as well as the northern fringe of Scandinavia, the old industrial heart of England as well as high-tech regions such as Stuttgart and Midi-Pyrénées, they all belong to the European Union.

Indeed, one of the main challenges of formulating EU policy has always been to seek out common features and to find compromises amongst the diversities which remain (Button & Pentecost 1999:7). That is also why reducing economic disparities between regions in terms of levels of development has always been at the heart of European integration (Treaty on European Union art.158, ex-art.130a). In order to achieve this, it was considered appropriate, if not necessary, to intervene in the spatial distribution of economic performance by means of public policy. Whether these interventions have been a success, has been the subject of many studies (Molle 1980; Molle & Cappellin 1988; Armstrong & Taylor 1993; Bachtler & Turok 1998; Rodríguez-Pose 1998; Fagerberg, Guerrieri & Verspagen 1999).

Nevertheless, as too much economic divergence has always been considered counter-productive to the 'overall harmonious development' of the EU, public policies have been put in place at Community level to reduce 'disparities between the levels of development of the various regions and the backwardness of the least favoured regions or islands, including rural areas' (TEU art.158, ex-art.130a). The most well-known are the Structural Policies administered by the Regional Policy Directorate-General, but also policies dealing with Research and Technological Development (RTD) administered by the equivalent Directorate-General seek to strengthen Europe's 'economic and social cohesion' (TEU art.158, ex-art.130a), as there is indeed much evidence on significant spatial disparities in R&D intensity.

A recent strategy paper from the European Commission brings these two hitherto distinct EU policy areas – regional policy and research policy – together. Building on experiences made with regional innovation policy schemes at Community level in the nineties, this joint Communication presents an outline of a more regionalised RTD policy at Community level.

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The scientific reflection on region-specific development patterns and structures in the EU in the context of EU-wide RTD policies is still in its infancy and needs a broader positioning from the perspective of modern growth theory. This chapter will start with a concise review of current theoretical issues (§2). After that, the chapter will present some regional data measuring R&D intensities in order to raise awareness for the magnitude of regional differences between European regions that underlie economic growth and development (§3). In order to understand the 'new' Community research policy, this chapter will not only describe the main features of EU RTD policy, but also the main development stages of Community research and technology policy in general (§4 and §5). It will outline then the main motivations, key factors and related region-specific features of EU technology policy (§7). It seeks to explain the driving forces in EU RTD policy towards regional interests and opportunities, taking regions as stakeholders in EU technology policy. As this idea was preliminary tested in the so-called RITTS/RIS pilot projects during the 1990s, §6 will dedicate some attention to the features and the main impact of this Community scheme. The chapter will end with some concluding remarks and three messages providing further food for thought (§8).

## 2. Modern regional economic growth theory

In a globalising – or at least an open economic – world, many regions witness an extension of their action radius. Regions tend to become global players in an international market and even more so with the advent and rapid adoption of the ICT sector. Regions are exposed to new ICT inventions, but are also willing to play an active role in this new activity field. One need not believe in the 'death of distance' to argue in a plausible way that regions are able to offer a potentially strong position in a global network economy (Castells 1996). Given the pervasive nature of the new information technology, regions are faced with the challenge to build competitive ICT strategies in an open world. They have to benefit from efficiency gains accruing from technological innovation and increasing returns related to economies of density and scale (Rivera-Batiz & Romer 1991).

Regions are only competitive actors, if the process of innovation production, diffusion and absorption is effectively organised. Failure to be competitive will erode the regional growth potential and will turn the regional economy into a losing one (see Slaughter 1997). High adjustment costs for capital and labour will then pave the road towards economic decline, 'hollowisation' and growing unemployment.

Various regions have been rather successful in understanding the 'sign of the times' (e.g. Baden-Württemberg, Catalonia, greater London, the Third Italy). The high economic performance of some of the regional forerunners has induced other regions to follow the same strategy, but this has not always been very successful due to lack of failure to identify a clear ICT market niche. Operating in an open international market presupposes that integration benefits be materialised through returns of scale (Venables 1995). More openness may bring about a higher average growth rate, but at the same time also rising regional disparities (Taylor 1996). Modern economic growth theory may be helpful in understanding that a trade-off may exist between the average growth rate in an open system and spatial equity (Walz 1996).

The changing scene in the position of regions in a global economy has had far reaching implications for regional development policy. Regional policy does not so much only serve to reduce disparities, but more so to create better competitive conditions, because regions are the 'workfloor' of economic activity. Consequently, innovation policy is becoming an essential and intricate part of regional policy in a modern network society. 'Schumpeterian' regional growth initiatives are more favoured than conventional equity initiatives (see also Nijkamp & Poot 1988).

In recent economic growth theory, it is taken for granted that many seemingly autonomous phenomena (such as technological change, institutional embeddedness, network emergence) are essentially the outcome of complex underlying behavioural processes at the micro and meso level (see for a review De Groot 2000). Modern endogenous (or new) economic growth theory has strongly been influenced by the seminal contributions of Lucas (1988) and Romer (1986) who have spurred fundamental research on causes of economic growth, both locally and globally. Initially, the basic aim was to formulate dynamic general equilibrium models with precisely formulated microeconomic foundations, that would allow to obtain a clearer understanding of evolutionary processes such as physical and human capital accumulation, innovation, knowledge accumulation and diffusion and product differentiation in terms of their impact on long-run economic growth. The adjustment of the traditional Solow-Swan growth framework, in which technological progress was treated as exogenous, by the incorporation of various endogenous learning and technology mechanisms (see, amongst others, Aghion & Howitt 1998, and Barro & Sala-i-Martin 1995) has generated a wealth of literature on endogenous growth and technological progress since the 1980s. Such new growth theories focus on the economic spin-off effects related to technological change and Research and Development, specialisation and trade, monopoly rents from innovation, Schumpeterian 'creative destruction', human capital and government policy. Other treatments of the relationship between technology, growth, and externalities have stressed its disequilibrium, uncertainty and evolutionary (or Schumpeterian) character (e.g. Dosi et al. 1988).

It goes without saying that region-specific RTD development does not come about automatically, but needs clear and focussed policy initiatives. As part of the overall mission for a balanced and competitive regional development in Europe, the EU has launched a series of RTD initiatives with the aim to create the seedbed conditions of regional technological innovation in European regions. Such active public involvement would increase the overall economic efficiency of regions through scale advantages, dynamic forerunner effects and long-term reallocation consequences. Clearly, this is not an easy task, as the specific contribution of innovation to regional development is not crystal clear at all. Consequently, much policy attention has to be given to enabling conditions. This issue will be further taken up in the next sections. But first, some regional data measuring R&D intensities are presented to demonstrate the enormous disparities in the underlying basic conditions for economic growth and development in Europe's regions.

### 3. Regional differences in R&D: is there a technology gap?

It is well established by now that 'technological change' – often shortened to 'innovation' – is, next to infrastructure access, among the main determinants of productivity growth.<sup>3</sup>

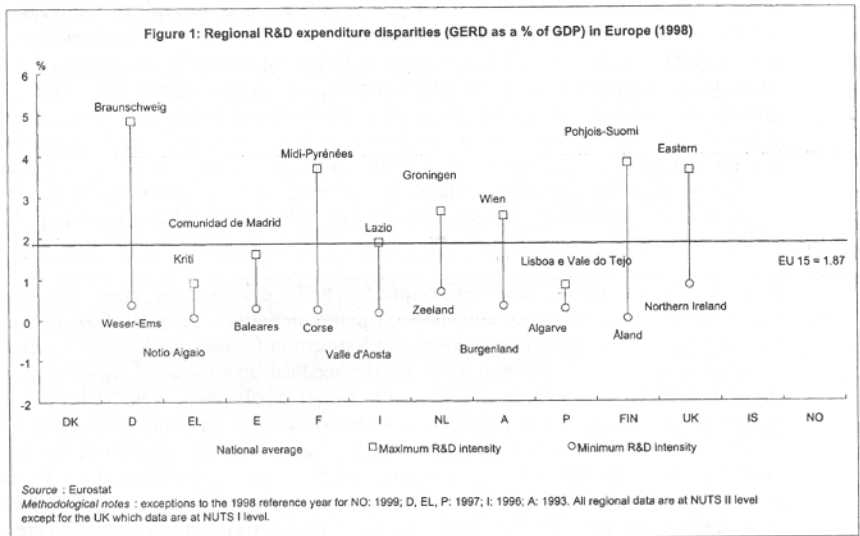
<sup>3</sup> Schumpeter divided 'technological change' into three stages (Schumpeter as quoted in Stoneman 1995:2):

1. invention, encompassing the generation of new ideas;

'Productivity is the key to increasing real income and competitiveness and is one of the most important yardsticks of industrial performance', to quote a recent OECD report (OECD 1999:17).

What applies for national economies, also applies for regional economies. Innovation has, in general, become a distinguishing factor separating the economically successful from the less successful regions. Something that gives policy-makers great concern given the striking differences in innovation performance among European regions. Taken as a proportion of GDP (gross domestic product), gross expenditure on research, technological development and innovation in Europe's 25 least-favoured regions is less than a quarter of the EU average (ITT Newsletter 05/2001:20). Clearly, this is only an input indicator, but there is due evidence that shows the prominent role of R&D in creating wealth.

Figure 1 is based on the same indicator of R&D intensity<sup>4</sup>, showing remarkable differences in R&D investment between European regions. The Greek archipelago of island regions Notio Aigaio spends a mere 0.06% of its GDP whereas the German region Braunschweig – home to Volkswagen automotive sector – spends 4.84 % of GDP on R&D, far above the EU average of 1.87% of GDP (1997 data; EU average 1998).



2. innovation, encompassing the development of new ideas into marketable products and processes;
3. diffusion, when the new products and processes spread across the potential market and the impact of new technology happens.

Besides the Schumpeterian description of innovation as one of the three stages making up technological change, innovation is often widely used as synonym for the whole process of technological change (Stoneman 1995:3).

<sup>4</sup> R&D intensity is defined as 'gross expenditure on research and development [= GERD] measured as a % of GDP [= Gross Domestic Product]'. GERD can be subdivided in BERD [= business enterprise expenditure on research and development], GOVERD [= government expenditure on research and development], HERD [= higher education expenditure on research and development] and OTHER [= for example, expenditure on research and development from abroad].

One could draw at least three conclusions from Figure 1. One, the average R&D intensity does not only vary between countries, but also and more profoundly between regions. The 'technology gap'<sup>5</sup> between the approximately two hundred regions<sup>6</sup> in Europe, therefore, is far greater than the 'technology gap' between the fifteen Member States. Of course, some caution is needed here as the data lead to more extreme outcomes with a lower spatial scale.

Two, 'best' performing regions in terms of R&D investments as well as 'worst' performing regions can be found throughout the European Union. Across Member States, best performing regions seem to share similar characteristics just as worst performing regions are.<sup>7</sup> For example, the German region Weser-Ems invests only 0.39% of its GDP to R&D which is twelve times less than the before-mentioned Braunschweig region, but the same as Extremadura, Spain (0.39%, 1997 data). Regions with low R&D intensity scores show consistently low levels of R&D investment coming from the business sector. This low level of undertaking some form of internal R&D activity results in sub-optimal absorptive capacities that could otherwise enable firms to take advantage of knowledge spill-overs elsewhere in Europe. Given the importance of the business sector for a region's economic competitiveness, policies can help these companies to develop an 'internal bottom-up learning process' (Antonelli & Calderini 1999).

Three, not surprisingly are the regions that are the best performers in their home country, often large metropolitan areas such as Comunidad de Madrid in Spain, Lazio around Rome, Vienna in Austria, the greater Lisbon area and Eastern UK south of London, which provide firms with a thriving business environment due to economies of scale and scope, a well connected infrastructure (including ICT), a concentration of highly qualified people, high-class universities conducting basic research and a political power centre.

As said above, technological change or innovation is considered to be an important factor promoting regional economic growth and development (which incorporates softer aspects such as sustainability, environment, human potential). New in the recent strategy paper from the European Commission, also referred to as Commission Communication, is the acknowledgement that not only applied research and technological advancements have distinct regional features. Small and medium-sized enterprises (SMEs) often lack the wider constituency of resources needed to innovate which could be provided for by the region's

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<sup>5</sup> The 'technology gap' refers to the disparities in R&D spending relative to GDP between countries or regions. The technological disparities between Europe's regions are far greater than their economic or wealth disparities. Moreover, instead of convergence at the regional level, some authors argue that one can observe divergence – an increasing gap between technologically advanced regions and less technologically advanced ones. For those interested in the 'convergence versus divergence' debate, a good starting point might be 'The Economic Challenge for Europe: Adapting to Innovation Based Growth' by Jan Fagerberg, Paolo Guerrieri and Bart Verspagen, published in 1999 by Edward Elgar.

<sup>6</sup> Based on the NUTS classification of EUROSTAT. The 'Nomenclature d'Unités Territoriales Statistiques' (NUTS) – translated into English as 'nomenclature of territorial units for statistics' – was established by EUROSTAT to provide a uniform and consistent breakdown of territorial units for the production of regional statistics for the European Union. NUTS subdivides the fifteen Member State into 78 regions at NUTS I level, 211 regions at NUTS II and 1093 regions at NUTS III.

<sup>7</sup> An interesting typology of European regions in terms of their R&D performance was presented in the Second European Report on Science and Technology Indicators (1997a), published by the European Commission.

innovation system.<sup>8</sup> Also, basic research and new-to-the-world technologies have a territorial dimension which has been neglected until now.

Before discussing this Communication in detail, a short overview will be given first on how European research and technology policy came into existence. This will also enable the understanding of what is new about the Community's 'new' research policy.

#### **4. The history of Community RTD policy in short**

It would be fair to say that RTD policy is a fairly young policy area at Community level getting its first official mandate from the Member States some fifteen years ago. With the drafting of the Single European Act in 1986, Research and Technological Development became the official responsibility of the European Commission which was incorporated in the Treaty on European Union five years later. The thirty years preceding the Single European Act, a true European research and technology policy did only exist as a supportive measure 'to improve the overall competitive position of European industry' focusing mainly on nuclear energy, coal and steel (Treaty of Rome art.3).

Since the mid-1960s, Community's research activities gradually extended to other fields besides nuclear energy, coal and steel, although the RTD landscape was still solidly dominated by national policies and their focus on creating 'national champions' (Peterson & Sharp 1998). This started to change in the early 1980s under the inspiring leadership of Commissioner Davignon and proved to be a period of policy transition within the European Community. At the most senior levels of EC policy-making in the 1980s, an active interventionist view was taken towards European high technology industry's competitive enhancement (Lawton 1999:28).

This new policy climate was reflected in the Single European Act which would prove to be a significant landmark in the development of European RTD policy when it came into force in 1987. The European Single Market initiative promoted greater concern with the competitiveness and productivity of industries and firms when free movement of goods, services, labour and capital was going to take place in the European Union. Research and technological development, and more generally, the capacity to innovate and upgrade, particularly in products and processes, started to gain importance among EU policy-makers as one of the essential factors shaping Europe's competitiveness (CEC 1993).

With the ratification of the Treaty of Maastricht in 1993, the objective of Community RTD policy became 'the strengthening of the scientific and technological bases of Community industry and encouraging it to become more competitive at international level, while promoting all the research activities deemed necessary by virtue of other chapters of the Treaty' (TEU art.163, ex-art.130F).

In the early 1990s, the idea grew stronger that Europe had serious problems in converting basic research results into commercial profitable products, despite its strong technological base. The so-called 'European innovation paradox' referring to its innovation deficits was born (Muldur 2001). Two important strategy papers from the Commission analysing these

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<sup>8</sup> According to the Green Paper on Innovation (CEC, 1995:45), 'the local or regional level is in fact the best level for contacting enterprises and providing them with the necessary support for the external skills they need (resources in terms of manpower, technology, management and finance).'

problems and suggesting solutions should be mentioned here: the White Paper on Growth, Competitiveness and Employment (CEC 1993) and the Green Paper on Innovation (CEC 1995).

The 1993 White Paper on 'Growth, Competitiveness and Employment' identified a number of weaknesses from which Europe suffered, including unduly low levels of RTD investment, a lack of co-ordination at various RTD levels and a comparatively limited capacity to convert scientific breakthroughs and technological achievements into industrial and commercial success. A similar list of weaknesses emerged from the 1995 Green Paper on Innovation. The White Paper identified the need to define a global strategy bringing together the public authorities, research bodies and the various sectors of society concerned, while the Green Paper stressed the importance of the regional level in the formulation and implementation of such a strategy.

Thanks to these policy documents, 'innovation' got a prominent place on the political agenda during the second half of the 1990s, not only at EU level, but also at national and even regional levels of government. Looking at Community RTD policy from an historic point of view, one could say that it has moved from being a minor industrial policy instrument in the 1950s to becoming a research and technology policy in its own right in the 1980s with its own set of instruments – the Framework Programmes are the most well known ones – and an increasing budget over the past fifteen years.

## **5. A new vision on Europe's research policy: building a European Research Area**

At the start of his mandate in 2000, the new Commissioner for Research, Philippe Busquin, launched a new vision on Europe's research policy called the 'European Research Area'. The European Research Area could be considered a new landmark for RTD policy at EU level as it advocates a fundamental reshaping of relationships between 'layers and players' in the RTD landscape.

On 23-24 March 2000, a European Council was held in Lisbon under the Portuguese Presidency and its key strategic objective endorsed by the Member States was set 'to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'.<sup>9</sup>

Given the significant role played by research and technological development in generating economic growth, employment and social cohesion, it was agreed in Lisbon that the Union must work towards the objectives set out in the Commission's Communication 'Towards a European Research Area' (CEC 2000a). Research activities at national and Union level must be better integrated and co-ordinated to make them as efficient and innovative as possible, and to ensure that Europe offers attractive prospects to its best brains. The instruments under the Treaty and all other appropriate means, including voluntary arrangements, were to be fully exploited to achieve this objective in a flexible, decentralised and non-bureaucratic manner. At the same time, innovation and ideas should be adequately rewarded within the new knowledge-based economy, particularly through patent protection.

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<sup>9</sup> The Conclusions of the European Council Meeting in Lisbon of 24.03.2000 can be downloaded from <http://ue.eu.int/en/Info/eurocouncil/index.htm>.



The idea of ERA centres around an institutional reshaping to turn the EU into one 'European Knowledge System' – which functions as a true Single Market for research – based on a new rationale for Community action in the area of science and technology and a new form of Commission involvement in the management of European RTD policy.

Similar to the early 1990s, the European Research Area is based on an observation of what is wrong with Europe's research and how to cure it. This time the main problem seems to be that research in Europe is not only diverse, but also highly fragmented. As Cannell (2001:207) describes it 'it [Europe's research] operates, for the most part, within national structures, of funding, regulation, and administration. These act in parallel with one another, and with the actions of the Union and other European co-operation frameworks, with very little co-ordination. The result is a highly sub-optimal overall environment for research, with numerous rigidities, overlaps and duplications.'

The European Research Area intends to promote a more coherent overall policy framework and has – as such – 'the ambition of *re-inventing* the European research landscape, in *re-defining* the roles of each of the players (including public authorities and private operators) and *re-configuring* the processes and policies that underpin the research effort in Europe' (Mitsos 2001:2).

The major challenge of European Union research policy is therefore not the implementation of research action on the Community's behalf – which will remain in place through the Framework Programmes for Research and Technological Development, but the development of greater coherence between national frameworks for action (Cannell 2001:210).

Seeing Europe's research landscape as a system containing of different 'layers and players', the European Research Area requires more 'governance' instead of more 'government'. Activating the self-organising elements of this system can be done in various ways. One until recently neglected way is to integrate the regional dimension more actively in the European research governance system.

The European Research Area introduces the idea of building upon the potential of the regions and using 'prime regional movers' to develop a more dynamic scientific and technological landscape. Although new within the 'research policy' context, other Community policy areas already experimented with this idea during the 1990s in the so-called RITTS/RIS projects.<sup>10</sup>

Was Community regional policy since its inception in 1975 mainly based on equity arguments – reducing the economic development disparities between Europe's regions – Community RTD policy was always based on a different rationale, namely encouraging research excellence to enhance firms' competitiveness. During the 1980s, however, another rationale started to be heard in regional policy circles, namely that of 'endogenous development', helping regions to help themselves. Given the inequalities that existed among regions, including those related to their innovative capacities, the starting point for public intervention should be improving the resource base of the regions. No longer was infrastructure investments – the 'neo-classical' answer to economic imbalances – considered the sole solution. Intangible investments in education, training, research and innovation had to be made if regions were to succeed in taking charge of their own destiny.

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<sup>10</sup> More information can be downloaded from <http://www.innovating-regions.org>.

During that same period, the Single European Act, later officialised in the Maastricht Treaty, added 'economic and social cohesion' as an objective for Community RTD policy. This meant that research and technological development should be regarded not only as an objective in itself, but as an instrument to achieve other Community policies. Taking the Maastricht Treaty as evidence, regional policy and research policy seemed to be converging, even though it goes without saying that encouraging 'excellence' in order to achieve more 'equity' is a challenge in its own right. The way Community RTD policy intends to reconcile these two at first sight contradictory aims is by opening up possibilities for less developed regions to create better competitive conditions through RTD initiatives. As said earlier, although new within the research policy context, other Community policy areas already experimented with this idea during the 1990s in the so-called RITTS/RIS projects. It is therefore worthwhile to dedicate some attention to these projects.

## **6. Previous 'regionalised' European policy schemes dealing with technology transfer and innovation: the RITTS/RIS scheme**

Since 1994, Regional Innovation Strategies (RIS), under the European Regional Development Fund (ERDF), and Regional Innovation and Technology Transfer Strategies (RITTS), under the third activity of the Fourth and Fifth Community RTD Framework Programmes, have served as experimental policy tools for developing innovative capacity in the regions.

Since 1994, more than hundred regions have participated in the RITTS/RIS scheme and positive evaluation results can be shown.<sup>11</sup> In 1998, the concept was further developed by the Commission through the RIS+ initiative, aiming to ensure that the work begun under the RITTS/RIS projects moves beyond the strategic framework for action towards a concrete implementation of new measures and projects. Further developments include the Transregional Innovation Projects and the Transnational Innovation Strategy Projects under the Fifth Community RTD Framework Programme, aiming to encourage the transfer of experience from RITTS/RIS regions to partner regions in the accession countries.

The objective of RITTS and RIS projects is to formulate a regional innovation strategy which identifies the strengths and weaknesses in the innovative capacity of the region, including management, training and organisational issues as well as purely technological ones. The development of such a regional innovation strategy should be the outcome of a process that involved all the regional actors related to RTD, innovation and associated business support activities.

The main idea behind RITTS and RIS is two-fold:

1. to improve the capacity of regional actors to formulate regional economic policy which take into account the real needs of the business sector, particularly small and medium-sized firms, and the strengths and capabilities of the regional RTD and innovation community;
2. to provide a framework within which both the European Union and the regions can optimise policy decisions regarding future investments in RTD, innovation and technology transfer initiatives at regional level.

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<sup>11</sup> CEC, 1997b, External Evaluation of the Regional Technology Plans. Technopolis Ltd. in co-operation with the University of Athens; CEC, 1999, On-going Evaluation of the Regional Innovation Strategies under Article 10 of the ERDF. ECOTEC Research and Consulting Ltd.; CEC, 2000b, Assessment of the Regional Innovation and Technology Transfer Strategies and Infrastructures (RITTS) Scheme. CURDS, MERIT, PAR, ÖIR.



The evaluation of the aforementioned RITTS/RIS scheme showed a number of important results that are encouraging signs to continue both within EU regional policy and within EU research policy in the direction already started. For regional policy that means a continued focus on innovation-led regional development creating conditions that enhance regional competitiveness; for research policy that means treating regions as forces in their own right capable of defining tailor-made regional RTD policies.

The over hundred regions that participated in the RITTS/RIS scheme between 1994 and 2000 differed in terms of economic conditions, population density, political power, financial resources, research and innovation capacity. Despite these differences, all regions shared the view that supply-side problems were not the core problem of their hampering economic development. Most regions in Europe had, due to decentralisation and devolution processes, over the years invested, partly with Structural Fund money, in the creation of science parks, innovation and incubation centres, university-industry liaison offices, technology demonstration centres, technology diffusion networks, public laboratories and universities, training institutes, etc.

The real problem was increasingly considered to be the mismatch between the supply and the demand-side of the innovation system. Firms, particularly small and medium-sized firms, face a number of weaknesses with respect of innovation such as finance, human resources, design, marketing, organisation and management issues. The policy actions put in place by local and regional governments over the years had been too long focussed on supplying firms with innovation-related services, thereby forgetting to monitor changes in firms' needs for these services.

The RITTS/RIS scheme aimed at enhancing the operating efficiency of the regional innovation and technology transfer support infrastructures and policies towards satisfying firms' needs, particularly of SMEs. In addition, it examined the efficiency of policies directed at these issues, and the allocation of resources and tasks within the region's SME support infrastructure directed at innovation, technology diffusion and exploitation. The RITTS/RIS scheme was warmly welcomed by the regions, because they offered them valuable policy-making support; the RITTS/RIS scheme can, therefore, be considered a tool for building 'policy-making capacities' in the area of innovation and technology transfer (Corvers 2003).

Although the extent to which regions managed to develop a strategic innovation policy varies, one could argue that the RITTS/RIS scheme had positive impacts for all regions on the following aspects (Charles et al. 2000; Boekholt et al. 1998):

1. It brought in a much needed move towards strategic thinking for innovation-oriented regional development. Innovation was put on the political agenda and resulted in some regions in a significant increase in public expenditures dedicated to R&D. Other regions, eligible for Structural Fund money, used the scheme to define policy priorities for the Operational Programmes and Single Programming Documents of the Structural Funds. Ad-hoc selection of projects made room for a more systemic appraisal of the region's strengths and weaknesses and was translated into a 'vision' on the region's future.
2. It offered mechanisms and incentives to create a dialogue between the regional players. Attempts to bring all regional stakeholders together and work towards a shared view on the region had already been undertaken by several regions, but had always failed, because

of the inability to overcome institutional, political, cultural, sometimes even geographical barriers. This scheme offered the possibility to 'use' the Commission as the organization placed above all regional parties demanding of them to work together in this Community co-funded project. Deliverables had to be presented to this organization in order to obtain funds. As a result, unlikely coalitions become feasible, even desirable. Policy options, before non-existing or not spoken out loud, were put on the table and lively discussions followed.

3. It helped to develop a broader concept for innovation, different from technology transfer, and put this higher on the policy agenda. The RITTS/RIS scheme contributed significantly to establishing a strategic planning culture and helped widening the scope of RTD policies. Other areas linked to RTD and innovation were discussed and incorporated in the innovation strategy process such as human resource development, finance for innovation projects, firm collaboration, supply chain management, the use of clean technologies and sustainable development.
4. It supported many regions to clarify the scene of innovation support infrastructure and to develop actions to rationalise, better define and augment the visibility of this infrastructure. With the help of a team of regional, national and even international experts, each RITTS/RIS region had to perform a 'needs analysis'. Regional firms were interviewed, surveyed, visited, invited to meetings and workshops, all in order to assess their innovation needs. For many regional policy-makers this confrontation was an eye-opener, but also helped them to redefine innovation structures. In doing so, they came to realize that universal solutions to innovation deficits do not exist. All policy solutions need to be tailored towards the specific characteristics of the regional innovation system and should be, if possible, demand-led instead of supply-push.

## **7. Building a European Research Area means involving Europe's regions.**

Coming back to the 'new' Community RTD policy which gives regions a more prominent place in the European Research Area, one can clearly see that the emphasis on applying a bottom-up and tailor-made approach to research and technological development builds upon the good practices accumulated in the RITTS/RIS scheme.

The idea that 'local action should start from a shared diagnosis of the territory and the definition of common strategic objectives' is certainly RITTS/RIS inspired, as is the governance idea of 'integrating all local players in the regional strategy, including the regional authorities, the private sector, academic and RTD institutions, social partners and civil society' (CEC 2001:9)

A greater emphasis on regions in EU research policy addresses two main issues. First, increasing regional awareness of national research and innovation policies and tuning them towards the socio-economic needs of the region. Two, directing these policies to build research and innovation capacity in the regions, enhancing their ability to act as drivers for economic and technological development. This may be achieved through (CEC 2001: 7):

- establishing research and innovation strategies to develop material and human resources such as supplying research infrastructures and equipment, local university and training facilities, support structures to foster creation and growth of innovative enterprises, efficient

interfaces within the innovation system linking, for example, researchers, innovators and sources of finance, science and technology parks, research programmes, initiatives to attract researchers locally or promote staff exchanges.

- fostering partnerships between the public and the private sector in order to contribute to the European knowledge-based economy and stimulate knowledge creation and diffusion.
- promoting an environment conducive to research and innovation, through the introduction of accompanying legal, financial and fiscal conditions, that would prove necessary.
- stimulating experience exchange with other successful regions in specific fields.
- contributing actively to an integrated strategy for sustainable development.

Streamlining the efforts of regions in an European Research Area mind-set should have two clear objectives both with a distinct added value for European research and innovation policies. First, to stimulate a better uptake of research results into the local socio-economic fabric (especially vis-à-vis small and medium sized enterprises) and help translate them faster into economic growth. And second, to increase public and private investment in research and innovation in the regions, thereby stimulating economic and social development.

The next Community RTD Framework Programme (2002-2006) intends to help regions achieve these objectives by enabling them to participate as an independent legal entity in the new funding instruments for Community research, namely Networks of Excellence and Integrated Projects

Networks of Excellence – to be selected through Call for Proposals – can create better connectivity between central and peripheral hubs of scientific competence, thus offering increased opportunities for collaboration, staff mobility, information and knowledge exchange as well as positive spill-overs to the local and regional economies.

Integrated Projects – to be equally selected through Call for Proposals – will allow regional bodies to co-operate on a trans-national basis around specific scientific and technological objectives, aiming at concrete results.

## **8. Concluding remarks**

With the arrival of Commissioner Busquin, responsible for Research and Technological Development in the European Union, a new direction was given to Community RTD policy at the beginning of the new millennium. Similar to the Single Market for goods, services, persons and capital, one single market for research – one European Research Area – was to be put in place. One European Research Area can contribute to more coherence in the European research landscape and reduce costly duplications of Europe's research efforts undertaken at various 'layers' and by numerous 'players'.

Regions will play a particularly important role in the creation of a true European Research Area. Their role is two-fold. First of all, building up research and innovation capacities in Europe's regions will enable them to become better performers which are better equipped to deal with competition forces. An objective which is also promoted by the EU regional policy:

helping regions to help themselves through innovation-led regional development. Regional disparities can be reduced if more attention is paid to the RTD base and the innovative capacities of the region, given the fact that the regional growth potential is increasingly shaped by the effective organisation of innovation production, diffusion and absorption.

Secondly, due to the fact that regions will (have to) go through a learning process in order to become better performers, their ability to identify their RTD needs will be strengthened. Being able to define and voice these needs, these regions can have a constructive interaction with other policy actors at other policy levels demanding more fine-tuning of national (and European!) RTD policies towards the socio-economic needs of the region. By doing so, the self-organising elements of Europe's Research System are activated bringing greater coherence between the different frameworks for action, creating more synergies and reducing fragmentation of activities and resources.

The implications of giving Europe's regions a more prominent role in the implementation of Community RTD policy should not be underestimated for at least three reasons:

1. In the Communication, the region is seen as an actor in its own right, representing an economic system as well as political system whose forces can be mobilised in such a way that they can make a difference to the region's development path. An idea which has been around for some time now – both in the academic community as well as with policy-makers – but not all Member States equally subscribe to this in practice, even though the RITTS/RIS scheme shows encouraging results to continue in this direction.

2. Another message of the Communication which has been around for some time as well is the idea that 'technological change' – in the Schumpeterian definition – is quintessential to economic growth, job creation, renewal of the industrial fabric, competitiveness – also at the regional level. In this respect, it is important to emphasise again that the difference in RTD capacities and performance at national level are far less divergent than those differences measured by the same indicators at regional level. Sophisticating the system of regional RTD indicators and the up-to-dateness of data collection at regional level is paramount to design appropriate RTD policies at regional level.

3. In order to arrive at one European Research and Innovation System, an improved system of co-operation between stakeholders is crucial. It is more 'governance', not more 'government', that matters, bringing together different policy actors – at different policy levels – in different countries – involved in different policy areas – using different policy instruments. Making this system operational will be the true challenge of the European Research Area.

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